Minuteman 1 Personal Portable Electronic Calculator

Operating Instructions



Warranty

Minuteman 1 Electronic Calculator

Your new Minuteman 1 Electronic Calculator is a true, precision figuring instrument, developed to the most exacting standards possible. It is a durable machine, and with ordinary care and handling, will give you many years of maintenance-free performance. For this reason, it is fully warranted for one year (12 months) from date of purchase, under the terms and conditions of our standard factory warranty.

Operating Instructions

Introduction

Congratulations on the purchase of your new Minuteman 1 Electronic Calculator. It is a precision-built figuring instrument, designed with the very latest electronic components to perform a broad range of functions.

A tiny, solid state chip, which scientists refer to as Large Scale Integration (LSI) is the brainpower for your calculator and your assurance of optimum reliability. The display features another rugged advance: LED or Light Emitting Diode. There are just no individual lights to burn out. From its powerful nickel cadmium rechargeable battery pack to its vibration-free construction, your new calculator is a durable individual; capable of trouble-free performance in a plane, train or auto. Back at the office it works on standard AC current. It adds, subtracts, multiplies and divides, instantly. Silently. It will also do chain and mixed assignments and store a constant multiplier and divisor. Your new calculator automatically delivers answers accurate to the decimal and displays credit balance results. You will find the "How to Calculate" instructions helpful in your work.

Once you become familiar with them, you will truly know your calculator inside and out.

Please take a moment to review this folder. Do the examples illustrated and within a very short time, you will be breezing through the most difficult tasks with absolute assurance. As a fast reference, you will find an outline of the general operating procedures printed on the back of the calculator itself.

AC Operation:

Connect the Charger unit to any standard 120 Volt electrical outlet and plug the 3-wire connector into the Calculator. (Note that the 3-wire connector is keyed and should not be forced into the socket the wrong way.) After the above connections, the power switch may be turned on and operation started. (While connected to AC, with power pack attached, the batteries are automatically charged whether the power switch is "ON" or "OFF".)

Battery Operation:

Disconnect the Charger cord and turn the power switch "ON". (An interlock switch in the Calculator socket will prevent battery operation if the 3-wire plug remains connected.) With normal use, a full battery charge can be expected to supply about 5 hours of working time.

Note: When the low battery indicator (L) on the display is lighted, do not continue battery operation. This indicates need for a battery charge. Use of the Calculator can be continued during the charge cycle.

Battery Charging:

Simply follow the same procedure as in AC operation. The Calculator may be used during the charge period if desired. In order to fully charge a battery which has been completely discharged, 14 hours is required. In most cases, an overnight charge should be adequate if the batteries have not been fully discharged.

Note: Although no damage will result from prolonged periods with the Charger connected, it is advisable to remove the Charger cord when the Calculator is not in use after a full recharge cycle.

Controls and Indicators

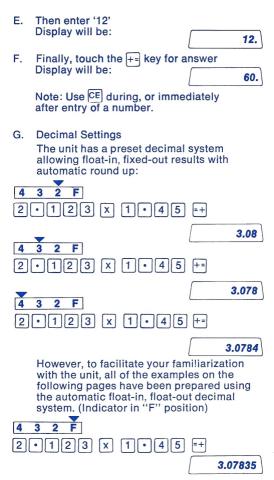
	O(3)
"ON" Switch	Turns Calculator "ON" & "OFF".
'K' Switch	Slide switch with 2 positions; in the up position, the 'K' operation is in effect. Use of 'K' allows a number to be entered and retained as a "constant" for series multiplication or division.
D Key	During battery operation, the display will automatically turn off about 15 seconds after the last operation. Pressing the D key recalls the contents of the display. Pressing any key also reactivates the display.
C Key	Clears the Calculator and the display of all numbers.
CE Key	Clears display of the previous keyboard entry.
× Key	Enters a "multiply" command.
÷ Key	Enters a "divide" command.
∓= Key	Adds the entered number, or carries out a previously entered "multiply" or "divide" command.
_= Key	Adds a minus sign to an entry. Subtracts the entered number or completes a previously entered "multiply" or "divide" command.
Key	Enters a decimal point.
0 - 9 Keys	Enter digits of a number

(limit 8 digits).

Power-ON Indicator	Appears at the ce Display when all of the Display are Appears as	other portions
Overflow Indicator	Indicates a calcu that contains mor digits. Appears as	
Low Battery Indicator	Warns of need fo charge during bat Appears as	
Minus Sign Indicator	Activated by the operations with numbers.	
Decimal Point Indicator	Automatically appears to the right of any number entered, unless inserted in another sequence by use of the Decimal key. With fractional numbers, it will be preceded by a zero.	
Error Indicator	Indicates an entry than 8 digits. Appears as	y of more

Preliminary

n	structions	
1. A.	To clear (erase) Touch the c key.	
B.	Cleared display will be:	0.
2.	To enter (write a number)	
	Example: enter 123.45	
Α.	First, clear by touching C	
B.	Then touch number and decin for 123.45 one at a time. Alway with the left hand digit and profrom left to right. Display will then be:	/s start
	Display will then be:	123.45
3.	To clear an incorrect entry	
	Example: $48 + 12$ is your calc	ulation
۹.	You have already entered 48	
	Display is:	48.
В.	You now touch the += key.	
Displ	Display will be:	48.
О.	Then you enter 13 by mistake The display is:	
		13.
Ο.	o clear 13, touch the CE key	A mistake!
DISP	Display Will De.	0.



Calculations

Addition

Example #1: 16.39 + 9.83 =

C a. 0.

16 • 39 b. 16.39

+= 16.39 C.

9 8 3 d. 9.83 e. += 26.22

Example #2: 16 + 9 + 8.3 + 4.1 =

a. C 0.

1 6 b. 16.

C. += 16.

9 d. 9.

e. 25.

f. 8 | • | 3 8.3 += g. 33.3 h. 4.1

i. 37.4

Subtraction Example #1: 12.81 - 3.6 =a. c

b. 1 2 • 8 1

c.

d.

e.

a.

b.

g.

h.

i.

+=

3 6

Example #2: 23 - 6 + 2.1 - 5 =

C

2 3

C. += 6 d.

e.

f.

2 • 1

5



14.1



6.

17.





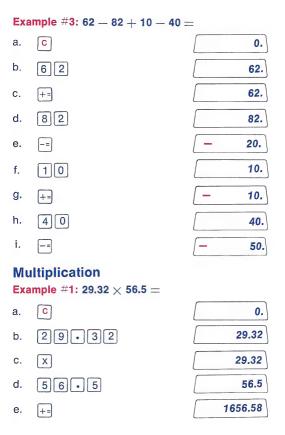
0.

23. 23.

0. 12.81

12.81

3.6



Multiplication

c.

d.

e.

f.

g.

a.

b.

C.

d.

e.

f.

h.

Example #2: $3 \times 21 \times 6.1 =$

a.	C		



Example #3: Use of 'K' Switch





0. 3.

3.

384.3

0.

0.

31.

31.

6.





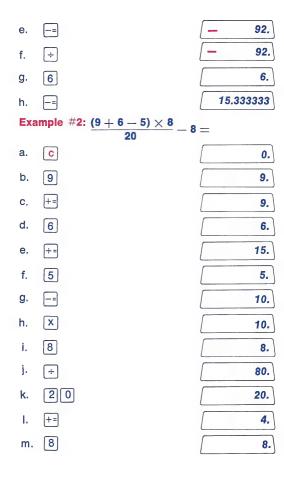




254.2

i. 7 • 6	7.6
j. +=	235.6
k. Push 'K' off (down) \downarrow	
Division	
Example #1: 376 \div 53 $=$	
a. C	0.
b. 376	376.
c. ÷	376.
d. 53	53.
e. +=	7.0943396
Example #2: 81 \div 3 \div 9 $=$	
a. C	0.
b. 81	81.
C. ÷	81.
d. 3	3.
e. ÷	27.
f. 9	9.
g.	3.

Exa	ample #3: Use of 'K' switch	181 ÷ 15 = 96 ÷ 15 = 117 ÷ 15 =
a.	C	0.
b.	Push 'K' on (up) ↑	0.
c.	181	181.
d.	÷	181.
е.	15	15.
f.	+=	12.066666
g.	96	96.
h.	+=	6.4
i.	117	117.
j.	+=	7.8
k.	Push 'K' off (down) ↓	
	xed Arithmetic imple #1: $23 \times (-4) = 10$	- (-6) = 0.
b.	23	23.
c.	X	23.
d.	4	4.



n.

4.

0.

0.

Exponents

C

Example #1: $(3)^5 =$

a.

b.

Push 'K' on (up) ↑

[3] c.

3. 3.

d. [X]

3.

3 e. f.

9.

g.

27. 81.

i. +=

h.

243.

j. Push 'K' off (down) ↓

Overflow Interpretation

The overflow indicator "\sum " will appear when the display capacity of the Calculator is exceeded.

For example, multiplication of 12345678×345678 will give the following display

42676.292

The "
"" symbol indicates "overflow", or an answer of more than the 8 digits shown. To obtain the correct decimal location, simply record the displayed number and move the decimal point 8 places to the right. The real answer will then be:

4,267,629,200,000.

This procedure applies to all operations, multiplication, division, addition and subtraction. Use the c key to clear the overflow.

Battery Notes

- With normal use at room temperature, a full battery charge can be expected to supply about 5 hours of accumulated working time.
- The Calculator may be used while its battery is charging.
- Batteries that have been neither used nor charged for as long as 2 or 3 months will suffer substantial loss of operating time through a tendency to self-discharge. As a general rule, batteries lose about 1% charge per day due to self-discharge, at normal temperatures.
- 4. For optimum performance and long life:
 - Alternate frequently between Battery and AC power.
 - b. Operate at or near normal room temperatures.
 - c. Charge as soon as possible upon appearance of the Low-Battery indicator.
- Recharge time is 14 hours for a fully discharged battery.
- 6. The Low-Battery indicator is designed to appear as soon as battery voltage drops to the lowest value that will support optimum performance of the Calculator. Should further discharge occur, through continued operations or self-discharge, the Low-Battery indicator may fail to appear. Do not continue to operate on batteries when this condition is noted, or a damaged battery may result.
- As a general rule, if improper operation occurs, first try the Calculator with its charger connected. If operation is then normal, this indicates the batteries are low.
- Do not store the unit in high temperature areas such as the top of radiators or the rear deck of automobiles exposed to the sun. The Calculator will operate satisfactorily over an ambient temperature range of 0 to 50C (32 to 122F) and relative humidity to 95%.
- Additional "Battery Paks" may be obtained by writing to the office nearest you. See back cover for addresses, or simply visit the authorized dealer in your community.

Sales and Service Centers Throughout the World

USA Commodore Business Machines, Inc.

390 Reed Street

Santa Clara, California 95050

31 East 32nd Street

New York, New York 10016

814 Busse Highway Park Ridge, Illinois 60068

CANADA Commodore Business Machines,

(Canada) Ltd.

946 Warden Avenue Scarborough, Ontario

ENGLAND CBM Business Machines, Ltd.

Princes House, Ste. 209 190 Picadilly

London W. 1

WEST Commodore Buromaschinen GmbH. GERMANY 3000 Hannover 17

3000 Hannover 17 Am Schafbrinke 62c West Germany

JAPAN Commodore Japan Ltd.

Ste. 706 Hayama Building 3-14 Hiroo 1-Chome

3-14 Hiroo 1-Chome Shibuya-ku, Tokyo